Amendment to the specification:

Insert the paper copy of the Sequence Listing filed herewith following the Drawings.

Please amend the paragraph beginning at page 9, which starts with "*DNA sequence*", as follows:

DNA sequence (Factor X sequence shown in gray):

GAC TCT AAG AAA GAC ATT TCG AAT GTT AAA AGT GAT TTA CTT TGC
GCA TAC ACT ATA ACT CCT ATC GAA GGT CGT ACG CCT GCT CAA AAT
AAT AAA GTA AAT CAT AAA TTA TTG GGA AAT CTA TTT ATT TCG GGA
GAA TCT CAA CAG AAC TTA AAT AAC AAG ATT ATT CTA GAA AAG GAT
ACC GTA ACT TTC CAG GAA ATT GAC TTT AAA ATC AGA AAA TAC CTT
ATG GAT AAT TAT AAA ATT TAT GAC GCT ACT TCT CCT TAT GTA AGC
GGC AGA ATC GAA ATT GGC ACA AAA GAT GGA AAA CAT GAG CAA ATA
GAC TTA TTT GAC TCA CCA AAT GAA GGG ACT AGA TCA GAT ATT TTT
GCA AAA TAT AAA GAT AAT AGA ATT ATC AAT ATG AAG AAC TTT AGT
CAT TTC GAT ATT TAT CTT GAA AAA TAA (SEQ ID NO:5)

Please amend the paragraph beginning at page 9, which starts with "*Protein sequence*", as follows:

Protein Sequence:

D S K K D I S N V K S D L L C A Y T I T P I E G R T P A Q N N K V N H K L L G N
L F I S G E S Q Q N L N N K I I L E K D T V T F Q E I D F K I R K Y L M D N Y K I Y D A
T S P Y V S G R I E I G T K D G K H E Q I D L F D S P N E G T R S D I F A K Y K D N R I I
N M K N F S H F D I Y L E K **Stop** (SEQ ID NO:6)

Please amend the Table 1 beginning at page 12, as follows:

Table 1: Primers used for amplification of the SPEC gene and introduction of mutations or truncations

SPEC – N-terminal	CGGGATCCGACTCTCAAGAAAGACA (SEQ ID NO:7)	
SPEC – C-terminal	CTGAATTCTTATTTTTCAAGAT (SEQ ID NO:8)	
SPEC- Y15A	GATTTACTTTGTGCATACAC (SEQ ID NO:9)	GTGTATGCACAAAGTAAATC (SEQ ID NO:15)
SPEC- N79C	ATATTCTTTGTTCTCACA (SEQ ID NO:10)	TATAAGAAACAAGAGTGT (SEQ ID NO:16)
SPEC- Y15C	GATTTACTTTGTGCATACAC (SEQ ID NO:11)	GTGTATGCACAAAGTAAATC (SEQ ID NO:17)
SPEC- R181Q	GAAGGGACTCAATCAGATATTTTTGC (SEQ ID NO:12)	GACAAAATATCTGATTGAGTCCCTTC (SEQ ID NO:18)
SPEC-(-20-90)	ATCGAAGGTCGTACGCCTGCTCAAAATAATAAAG (SEQ ID NO:13)	ACGACCTTCGATAGGAGTTATAGTGTAT (SEQ ID NO:19)
SPEC- C27S	GATTATAAAGATTCCAGGGTAA (SEQ ID NO:14)	TTACCCTGGAATCTTTATAATC (SEQ ID NO:20)

Please amend the paragraph beginning at page 17, line 1, as follows:

Primary DNA sequences of the wild-type and the mutant form of SPE-C are detailed below:

SPE-C wild type (from GenBank)

Streptococcus pyogenes pyrogenic exotoxin C gene, 5' end cds

GACTCTAAGA AAGACATTTC GAATGTTAAA AGTGATTTAC TTTATGCATA CACTATAACT
CCTTATGATT ATAAAGATTG CAGGGTAAAT TTTTCAACGA CACACACATT AAACATTGAT
ACTCAAAAAT ATAGAGGGAA AGACTATTAT ATTAGTTCCG AAATGTCTTA TGAGGCCTCT
CAAAAATTTA AACGAGATGA TCATGTAGAT GTTTTTGGAT TATTTTATAT TCTTAATTCT
CACACCGGTG AGTACATCTA TGGAGGAATT ACGCCTGCTC AAAATAATAA AGTAAATCAT
AAATTATTGG GAAATCTATT TATTTCGGGA GAATCTCAAC AGAACTTAAA TAACAAGATT
ATTCTAGAAA AGGATATCGT AACTTTCCAG GAAATTGACT TTAAAATCAG AAAATACCTT
ATGGATAATT ATAAAATTTA TGACGCTACT TCTCCTTATG TAAGCGGCAG AATCGAAATT
GGCACAAAAG ATGGGAAACA TGAGCAAATA GACTTATTTG ACTCACCAAA TGAAGGGACT
AGATCAGATA TTTTTGCAAA ATATAAAGAT AATAGAATTA TCAATATGAA GAACTTTAGT
CATTTCGATA TTTATCTTGA A (SEQ ID NO:1)

Protein Sequence – wild type

DSKKDISNVK SDLLYAYTIT PYDYKDCRVN FSTTHTLNID TQKYRGKDYY ISSEMSYEAS
QKFKRDDHVD VFGLFYILNS HTGEYIYGGI TPAQNNKVNH KLLGNLFISG ESQQNLNNKI
ILEKDIVTFQ EIDFKIRKYL MDNYKIYDAT SPYVSGRIEI GTKDGKHEQI DLFDSPNEGT
RSDIFAKYKD NRIINMKNFS HFDIYLE (SEQ ID NO:2)

SPEC- Y15A.C27S.N79C.R181Q

```
GACTCTAAGA AAGACATTTC GAATGTTAAA AGTGATTTACT TTATGCATA CACTATAACT
                                  GATTTACT TTGTGCATA CAC
                     C27S
CCTTATGATT ATAAAGATTG CAGGGTAAAT TTTTCAACGAC ACACACATT AAACATTGAT
      GATT ATAAAGATTC CAGGGTAA
ACTCAAAAAT ATAGAGGGAA AGACTATTAT ATTAGTTCCGA AATGTCTTA TGAGGCCTCT
                                                    N79C
CAAAAATTTA AACGAGATGA TCATGTAGAT GTTTTTGGATT ATTTTATAT TCTTAATTCT
                                          ATAT TCTTTGTTGT
CACACCGGTG AGTACATCTA TGGAGGAATT ACGCCTGCTCA AAATAATAA AGTAAATCAT
CA
AAATTATTGG GAAATCTATT TATTTCGGGA GAATCTCAACA GAACTTAAA TAACAAAATT

ATTCTAGAAA AAGATATCGT AACTTTCCAG GAAATTGACT TTAAAATCAG AAAATACCTT

ATGGATAATT ATAAAATTTA TGACGCTACT TCTCCTTATG TAAGCGGCAG AATCGAAATT

GGCACAAAAG ATGGGAAACA TGAGCAAATA GACTTATTTG ACTCACCAAA TGAAGGGACT
                                                    GAAGGGACT
R181Q
AGATCAGATA TTTTTGCAAA ATATAAAGAT AATAGAATTA TCAATATGAA GAACTTTAGT
CAATCAGATA TTTTTGC
CATTTCGATA TTTATCTTGAA (SEQ ID NO:3)
```

Protein Sequence (combined mutants)

```
DSKKDISNVK SDLLAAYTIT PYDYKDSRVN FSTTHTLNID TQKYRGKDYY ISSEMSYEAS
QKFKRDDHVD VFGLFYILCS HTGEYIYGGI TPAQNNKVNH KLLGNLFISG ESQQNLNNKI
ILEKDIVTFQ EIDFKIRKYL MDNYKIYDAT SPYVSGRIEI GTKDGKHEQI DLFDSPNEGT
QSDIFAKYKD NRIINMKNFS HFDIYLE (SEQ ID NO:4)
```

Please amend the paragraph beginning at page 20, which starts with "The primary nucleotide", as follows:

The primary nucleotide sequence of truncated version of SPE-C is detailed below:

DNA sequence (Factor X sequence shown in gray):

```
GAC TCT AAG AAA GAC ATT TCG AAT GTT AAA AGT GAT TTA CTT TGC GCA TAC ACT
ATA ACT CCT ATC GAA GGT CGT ACG CCT GCT CAA AAT AAT AAA GTA AAT CAT AAA
TTA TTG GGA AAT CTA TTT ATT TCG GGA GAA TCT CAA CAG AAC TTA AAT AAC AAG
ATT ATT CTA GAA AAG GAT ACC GTA ACT TTC CAG GAA ATT GAC TTT AAA ATC AGA
AAA TAC CTT ATG GAT AAT TAT AAA ATT TAT GAC GCT ACT TCT CCT TAT GTA AGC
GGC AGA ATC GAA ATT GGC ACA AAA GAT GGA AAA CAT GAG CAA ATA GAC TTA TTT
```

GAC TCA CCA AAT GAA GGG ACT AGA TCA GAT ATT TTT GCA AAA TAT AAA GAT AAT
AGA ATT ATC AAT ATG AAG AAC TTT AGT CAT TTC GAT ATT TAT CTT GAA AAA TAA
(SEQ ID NO:5)

Protein Sequence

D S K K D I S N V K S D L L C A Y T I T P L E G R T P A Q N N K V
N H K L L G N L F I S G E S Q Q N L N N K I I L E K D T V T F Q E
I D F K I R K Y L M D N Y K I Y D A T S P Y V S G R I E I G T K D
G K H E Q I D L F D S P N E G T R S D I F A K Y K D N R I I N M K
N F S H F D I Y L E K Stop (SEQ ID NO:6)

Please amend the paragraph beginning at page 21, which starts with "Synthetic peptide", as follows:

Synthetic peptide containing a C-terminal cysteine residue and SPEC-Y15A.C27S.N79C are mixed together and incubated at room temperature for 1 hour at a molar ratio of 1:2 in a alkaline buffer containing 1 μM Cu^{2+}. The copper acts as a redox catalyst. In the example below, a synthetic peptide of the pigeon cytochrome C (PCC) is provided, but this method will work for other peptides also so long as a free sulphur atom is present in the peptide.

SPEC-Y15A.C27S.N79C.R181Q (MW 26,500) 10 mg/ml (380 μM)	PCC peptide (RADLIAYLKQATKC) (SEQ ID NO:21) (MW 1400) 10 mg/ml (700 μM)	Buffer
100 μl	10 μl	200mM Tris pH8.0, 1 μM $CuSO_4$

Please amend the paragraph beginning at page 22, which starts with "The 5C.C7 transgenic", as follows:

The 5C.C7 transgenic mouse was originally constructed by Berg et al. [17]. This mouse is transgenic for a TcR specific for the pigeon cytochrome C (PCC) peptide presented by mouse I-A^d. Greater than 80% of mature T cells from 5C.C7 mice express the transgenic TcR and respond to synthetic PCC peptide RADLIAYLKQATK (SEQ ID NO:22) in vitro. This mouse

provides an excellent means to test PCC specific T cell responses both in vitro and in vivo as well as conduct adoptive transfer experiments. Adoptive transfer is a powerful method that allows the introduction of PCC reactive T cells into non-transgenic mice to study responses at varying T cell precursor frequencies.